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OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

MEMORANDUM

SUBJECT: Applicability Of A Combination Leak Detection Method For Upgraded Underground Storage Tanks

FROM: Anna Hopkins Virbick, Director
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TO: EPA UST/LUST Regional Program Managers
State UST Program Managers

This memorandum clarifies an underground storage tank (UST) leak detection issue that affects a subset of existing USTs. This subset consists of existing USTs in which the tank itself meets 1998 standards for corrosion protection before or after the entire UST system meets 1998 standards for spill, overfill, and corrosion protection. A question has arisen as to the length of time this subset of existing USTs may use the leak detection method that combines monthly inventory control with tank tightness testing every five years for regulatory compliance. For convenience, in the clarification which follows, we will call this leak detection method the "combination method."

When can you start using the combination method as an approved leak detection method?

The federal regulations at § 280.41(a)(1) state that the combination method satisfies federal leak detection requirements only when applied to an UST system that meets the performance standards for new UST systems (at § 280.20) or upgraded UST systems (at § 280.21). Basically, these standards require the UST system to have spill, overfill, and corrosion protection for tanks and piping.

How long can an UST system use the combination method?

Federal regulations at § 280.41(a)(1) state that the combination method may be used for a maximum of 10 years after the tank is installed or upgraded with corrosion protection. *Note that this time period is based on the compliance status of the **tank only**, not the entire UST system.*

This information is basically consistent with EPA materials circulated to date and should create no confusion as long as: 1) the tank and the rest of the UST system are upgraded at the same time, or 2) the tank has corrosion protection added after the rest of the system has been upgraded. In these cases, USTs can use the combined method for 10 years after the tank has corrosion protection or December 1998, whichever date is later.

But what about the smaller subset of existing USTs in which the tank has corrosion protection *before* the rest of the UST system meets upgrade standards? In some of these cases, the combined method may not be valid for more than a few years. As noted above, the federal regulations at § 280.41(a)(1) state that once the entire system is upgraded the combination method can meet the federal leak detection requirements. However, § 280.41(a)(1) also establishes an ending date for the period during which this combination is valid. **The ending date is either 10 years after the date the tank has corrosion protection or December 22, 1998, whichever date is later.** Since the period of validity cannot begin until the whole system has met upgrade or new performance standards, the period of validity is less than 10 years in cases only where the tank has been protected from corrosion before the rest of the UST system meets the upgrade standards.

The sample cases which follow illustrate three typical situations:

Tank and other UST system components all upgraded at the same time: For example, a bare steel tank installed in 1980 is subsequently, in 1995, assessed by means of an internal inspection and is upgraded with corrosion protection, has spill and overfill protection added, and is equipped with new piping. This UST system can use the combination method from 1995 until 2005, which is the later of the two potential ending dates (either 1998 or 10 years following the date the tank has corrosion protection). After 2005, the UST in this example must use a monthly monitoring method.

Tank has corrosion protection added after the rest of the UST system meets upgrade standards: For example, a bare steel UST installed in 1980 has its piping upgraded and spill and overfill protection added in 1993, but the tank is not upgraded with corrosion protection until 1995. This UST system can use the combination method from 1995 until 2005, which is the later of the two potential ending dates (either 1998 or 10 years following the date the tank has corrosion protection). After 2005, the UST in this example must use a monthly monitoring method.

Tank has corrosion protection *before* the rest of the UST system meets upgrade standards: For example, a bare steel tank is upgraded with corrosion protection in 1986 (or the tank is made of noncorrodible material and installed in 1986), but the piping, spill, and overfill upgrades were not added until 1995. This would mean that the UST system could start using the combination method to meet federal leak detection requirements only in 1995 (when the full system first met all upgrade standards) and could use the combined method only until 1998 (the date which is the later of either 1998 or 10 years after the tank has corrosion protection). In this example, the UST

may use the combined method to meet federal leak detection requirements only for three years (from 1995 to 1998). After 1998, the UST in this example must use a monthly monitoring method.

You should be aware that these qualifications apply also to USTs ranging in capacity from 1,001 to 2,000 gallons that use a variant of this combination method. These small USTs are allowed to use a combined method of manual tank gauging with tank tightness testing every five years with the same qualifications noted above for USTs using the method that combines inventory control and tank tightness testing. (Please note that the requirements for “manual tank gauging” differ greatly from the requirements for “inventory control”; do not confuse these two separate leak detection methods.)

In all cases, when the combination method can no longer be used, monthly monitoring is required by the federal leak detection regulations. Approved monthly monitoring methods are identified in § 280.43 (b), (d)-(h) as manual tank gauging (only for tanks 1,000 gallons or smaller), automatic tank gauging, vapor monitoring, groundwater monitoring, interstitial monitoring, and other methods, such as statistical inventory reconciliation, that meet performance standards or are approved by the implementing agency as equally effective in detecting leaks.

If USTs are not using monthly monitoring or are not eligible to use the combination method (as in the examples above when the entire UST system has yet to meet upgrade standards), the only allowable leak detection method is *annual* tightness testing combined with inventory control. However, USTs lacking full system upgrade can use this method only until December 1998, after which they must be replaced by new USTs, upgraded to meet 1998 standards, or be properly closed.

Some questions have arisen as to when the tightness tests required “every five years” must take place. There is potential confusion if the UST can use the combination method as a valid method for a number of years that is not a multiple of five years, for example, for three or eight years. While a tightness test is probably beneficial, EPA’s regulations do not require testing at the end of the period of validity. Thus the requirement for testing at least every five years for a tank that may only use the combination method for three years does not require a test at the third year. However, over an eight-year period it does require at least one test in either the third, fourth, or fifth year, so that no more than five years elapse between the tightness test and both the beginning and the end of the leak detection method’s period of validity.

Hazardous substance tanks are generally not impacted by this clarification, because after December 22, 1998 they must begin monthly interstitial monitoring unless a variance is granted by the implementing agency.

For many older tanks, December 22, 1998 is the deadline for changing to stand-alone monthly monitoring methods, and is thus an important release detection deadline as well as a corrosion, spill, and overfill protection deadline.

Finally, please note that some implementing agencies have more stringent or different requirements. For example, some implementing agencies have adopted more stringent leak detection requirements for certain tanks upgraded under § 280.21(b)(2)(iv) regarding alternative integrity assessment methods used before upgrading steel tanks with cathodic protection. In these cases, if the implementing agency requires stand-alone monthly monitoring, today's clarification regarding the applicability of the combination method of leak detection does not apply (see memorandum dated July 25, 1997, "Guidance On Alternative Integrity Assessment Methods For Steel USTs Prior To Upgrading With Cathodic Protection").

This memorandum provides final clarification to the issue addressed in our draft circulated April 15, 1997, titled "Transmittal of Draft Interpretation of Leak Detection Requirements where a Tank Meets 1998 Standards at a Different Time than Other UST System Components." If you have any questions about this memorandum of clarification, please contact OUST's David Wiley (phone 703 603-7178 or e-mail wiley.david@epamail.epa.gov).

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